7S7
TRIODE-HEPTODE CONVERTER

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage	6.3□	ac or dc volts
Current	0.3□□	amp

Direct Interelectrode Capacitances:°

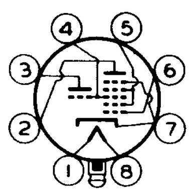
Heptode Grid No.1 to Heptode Plate	0.03 max.	μμf
Heptode Grid No.1 to Triode Plate	0.1 max.	μμf
Heptode Grid No.1 to Triode Grid & Heptode Grid No.3	0.35 max.	μμf
Triode Grid & Heptode Grid No.3 to Triode Plate	1	μμf
Heptode Grid No.1 to All Other Electrodes (RF Input)	5	μμf
Heptode Plate to All Other Electrodes (Mixer Output)	8	μμf
Triode Grid & Heptode Grid No.3 to All Other Electrodes Except Triode Plate (Oscillator Input)	7	μμf
Triode Plate to All Other Electrodes Except Triode Grid & Heptode Grid No.3 (Oscillator Output)	3.5	μμf

° With external shield connected to cathode.

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-25/32"
Maximum Seated Length	2-1/4"
Maximum Diameter	1-3/16"
Bulb	T-9
Base	Lock-in 8-Pin
Basing Designation for BOTTOM VIEW	8BL

Pin 1 - Heater
Pin 2 - Heptode Plate
Pin 3 - Triode Plate
Pin 4 - Triode Grid, Heptode Grid No.3
Pin 5 - Heptode Grids No.2 & No.4



Pin 6 - Heptode Grid No.1
Pin 7 - Cathode, Heptode Grid No.5, Internal Shield
Pin 8 - Heater
Plug - Base Shell

CONVERTER

Maximum Ratings, ***Design-Center Values*:**

HEPTODE PLATE VOLTAGE	300 max.	volts
HEPTODE GRIDS-No.2 & No.4 (SCREEN) VOLTAGE	100 max.	volts
HEPTODE GRIDS-No.2 & No.4 SUPPLY VOLTAGE	300 max.	volts

□ Nominal voltage = 7.0 volts. □□ Nominal current = 0.32 ampere.

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HEPTODE GRID-No.1 (CONTROL-GRID) VOLTAGE:			
Positive bias value	0	max.	volts
HEPTODE PLATE DISSIPATION	0.6	max.	watt
HEPTODE GRIDS-No.2 & No.4 DISSIPATION	0.4	max.	watt
TRIODE PLATE VOLTAGE	175	max.	volts
TRIODE PLATE-SUPPLY VOLTAGE	300	max.	volts
TRIODE PLATE DISSIPATION	1	max.	watt
TOTAL CATHODE CURRENT	14	max.	ma
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	90	max.	volts
Heater positive with respect to cathode	90	max.	volts

Typical Operation:

Heptode Plate Voltage	100	250	volts
Heptode Grids-No.2 & No.4 Voltage	100	100	volts
Triode (Oscillator) Plate-Supply Volt.	100	250†	volts
Heptode Grid-No.1 Voltage	-2	-2	volts
Cathode-Bias Resistor	240	195	ohms
Triode Grid & Heptode Grid-No.3 Resistor	50000	50000	ohms
Heptode Plate Current	1.9	1.8	ma
Heptode Grids-No.2 & No.4 Current	3	3	ma
Triode Plate Current	3	5	ma
Triode Grid & Heptode Grid-No.3 Current	0.3	0.4	ma
Heptode Plate Resistance	0.5	1.25	megohms
Conversion Conductance	500	525	μmhos
Conversion Conductance (Approx.) for heptode grid-No.1 bias of -21 volts	2	2	μmhos
Total Cathode Current	8.2	10.2	ma

† Applied through a 20000-ohm dropping resistor, properly bypassed.

NOTE: The transconductance of the triode section, not oscillating, is approximately 1650 μmhos under the following conditions: triode plate volts = 100, triode grid and heptode grid No.3 volts = 0. Under the same conditions, triode plate current is 6.5 ma., triode plate resistance is 11000 ohms, and amplification factor is 18.

TUBE DEPARTMENT
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